10/618,765 CLAIMS AS OF 9/16/05

CLAIMS:

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1. A liquid epoxy resin composition comprising (A) a liquid epoxy resin, (B) an aromatic amine curing agent, and (C) an inorganic filler, wherein

the aromatic amine curing agent (B) comprises at least 5% by weight based on the entire curing agent of at least one aromatic amine compound having a purity of at least 99% selected from compounds having the following general formulae (1) to (3):

wherein each of  $R^1$  to  $R^4$  is hydrogen or a monovalent hydrocarbon group having 1 to 6 carbon atoms,

the liquid epoxy resin (A) and the aromatic amine curing agent (B) are present in a molar ratio (A)/(B) from 0.7/1 to 0.9/1, and

the composition has a toughness  $K_{1c}$  of at least 3.5.

2. The composition of claim 1 which is substantially free 20 of an alkoxy-bearing silane coupling agent except that an alkoxy-bearing silane coupling agent is used for the surface treatment of the inorganic filler. 3. The composition of claim 1, further comprising a silicone-modified resin in the form of a copolymer which is obtained from an alkenyl group-containing epoxy resin or phenolic resin and an organopolysiloxane having the average compositional formula (4):

$$H_a R_b^5 SiO_{(4-a-b)/2}$$
 (4)

- wherein R<sup>5</sup> is a substituted or unsubstituted monovalent
  hydrocarbon group, "a" is a number of 0.01 to 0.1, "b" is a
  number of 1.8 to 2.2, and 1.81 ≤ a+b ≤ 2.3, said
  organopolysiloxane containing per molecule 20 to 400 silicon
  atoms and 1 to 5 hydrogen atoms each directly attached to a
  silicon atom (i.e., SiH groups), by effecting addition
  reaction between alkenyl groups and SiH groups.
  - 4. A semiconductor device which is encapsulated with the liquid epoxy resin composition of claim 1 in the cured state.
- 5. A flip chip type semiconductor device which is encapsulated with the liquid epoxy resin composition of claim 1 in the cured state as an underfill.